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# Levels of Virtue Literacy in Catholic, Church of England and Non-Faith Schools in England : a Research Report

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**Abstract**

This article reports on an innovative empirical research project, using a quasi-experimental trial, in which 9 to 11 year olds learned about character and virtues through the exploration of four classic stories. The overall aim of the programme was to enhance virtue literacy. Virtue literacy is defined as the knowledge, understanding and application of virtue language and is viewed as being integral to the development of character. The research assessed the impact of the programme on pupils attending faith and non-faith[1] schools across England. The research findings provide substantial empirical evidence for the effectiveness of using stories to develop moral character. Children attending Catholic schools had significantly higher scores in the trials pre- test indicating that they had a better developed initial grasp of virtue language and concepts, and therefore virtue literacy, compared to the pupils from non-faith and Church of England schools.

**Keywords:** virtue; literacy; character; moral education; primary schools.

## Introduction

The *Knightly Virtues* programme was inspired by the idea that stories of literary significance can be used in primary schools for teaching and learning about qualities of virtuous character. The presupposition was that tales of chivalry are an attractive, potent and enduring source of insight into the following eight virtues of character: gratitude, courage, humility, service, justice, honesty, love and self-discipline. Four stories, *Gareth and Lynette*, *El Cid*, *Don Quixote* and *The Merchant of Venice*, formed the basis of the original programme for 9 to 11 year old pupils. Other stories in the revised programme include *Rosa Parks* and *Anne Frank*[2]. We were confident that the issues of moral virtue raised by the



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stories would be of interest to pupils irrespective of ethnic background and gender and the enormous popularity of the programme among teachers and pupils demonstrated this. The programme was called the *Knightly Virtues*, but is simply referred to as the 'programme' in the text of this article. The aim of the programme was to enhance the virtue literacy of the 9 to 11 year olds who took part. To date over 7,000 pupils from over 100 schools across Britain have participated in the programme.

This article explores, in particular, the impact of the programme on faith and non-faith schools. Links between education for virtue and faith schools have been previously explored in the literature (see for example Pike, 2010; Grace, 2006), but not empirically tested. This article examines the data from the quasi-experimental trial and interviews relating directly to this point. The research reported here draws on data collected from 19 Catholic (941 pupils), 11 Church of England (576 pupils) and 25 non-faith (1755 pupils) schools who were directly involved in different stages of gathering the research data presented in this paper. The paper is organised as follows. First, we outline the definition of virtue literacy used in this study and provider a rationale for anticipating that schools can promote virtue literacy through their use of stories. Second, we describe the methods used to assess virtue literacy, the conduct of the intervention and the sample. Third, we present an analysis of school level differences in children's baseline virtue literacy, the overall effect of the intervention and differences in effect by type of school. We conclude with some implications for practice, policy and future research.

## Schooling for Virtue Literacy

### *Virtue Literacy as defined in this study*

The aim of the programme was to enhance the virtue literacy of the 9 to 11 year olds. There are two stages to enhancing virtue literacy. The first is developing a knowledge and understanding of virtue terms. The second is developing the ability and will to apply virtues to real life contexts. This research understands virtue literacy as requiring a wide range of

virtues, intellectual, moral, civic and performance, which need to be taught, learned and cultivated. It consists of three inter-related components: (i) virtue knowledge, (ii) virtue reasoning, and (iii) virtue practice. The first component is concerned with acquiring a complex language usage through familiarity with virtue terms. However, knowledge of the virtues themselves will not necessarily change behaviour. The second component concerns making reasoned judgements which includes the ability to explain differences in moral situations such as moral dilemmas. This emphasis on acquiring judgement must be reflective and so allow for the empowerment of the ethical self through autonomous decision-making. Both components relate to the acquisition of knowledge and understanding, but are also critically linked to the promotion of virtue practice. A child may acquire some cognitive understanding of what would be the desirable virtue to display in certain circumstances, but be unable to translate this knowledge and reasoning into virtuous action. Virtue practice, the third component, therefore constitutes the desirable and observable attitudes and behaviours demonstrated by a child.

The determination of whether a child is virtue literate should not be reduced to simple outcomes, but should consider all three components. Children need to be persuaded of the moral force of acting virtuously and can acquire virtue literacy, for instance as shown in this report, by means of a study of literature. Through such study they gain a practical conception of what virtues look like in life and how they can be operated. Schools need to provide opportunities for children to exercise the virtues in practice as well as encourage a rich discourse of virtue language, understanding and reasoning. How children develop their virtue literacy is intrinsically a contextual matter and is not something that can be easily traced in a linear or developmental fashion. Socially sensitive virtue literacy is about the ability to know, to understand, and to do what is the morally appropriate in the given circumstances, and it requires considerable intuitive artistry – gained only through experience – in addition to a grasp of general moral truths.

***The role of schools in developing virtue literacy***

In Britain as well as internationally, general concern with character has been implicated in wider debates about whether schools should be focusing upon promoting narrower goals of

official or prescribed school curricula – more specifically priming young people for passing set tests – or on preparing them more broadly for the unpredictable tests of post-school life. Concerning this question, there is a widespread groundswell of opinion that the education of young people should extend beyond the learning of academic subjects and/or useful skills to comprehend the development of character. Character education as the cultivation of virtue is once again being seen as a legitimate aim of teaching (Arthur, 2003). A recent Populus poll has indicated that parents believe that schools can and should teach character (Jubilee Centre, 2013).

Character is a constellation of virtues possessed by an individual, and character education is the deliberate attempt to cultivate these virtues. It should be clear that there can hardly be virtuous conduct in the absence of some understanding of the very meaning of such virtue terms as honesty, justice, self-control, courage or compassion (Arthur, 2010; Arthur, Harrison *et al.* 2014). In this light, it has been one of the primary aims of the programme to develop the knowledge and understanding of primary school pupils of the language of character and virtue, so tasks dedicated to this goal have featured conspicuously in the aims, objectives and lesson plans of the programme. To date Non-faith schools have no such requirement to teach virtues and Church of England schools vary in their approach. Catholic schools usually adopt a more explicit approach to cultivating the virtues in pupils than do non-faith schools. Nevertheless, all schools are being encouraged by the Government and it's inspection agency, OFSTED, to promote British values.

***Developing virtue literacy through stories***

There has been a long tradition of promoting the use of stories as one of the most promising and potent educational routes to the teaching of moral character. Aristotle held that the stories of cultural or literary inheritance have a power to illuminate moral and other aspects of human motivation, feeling and agency in a way that other (say natural or social scientific) sources of knowledge and insight are not necessarily equipped to do. Since Aristotle viewed the development of emotions and motivation as crucial to the cultivation of moral virtues, he regarded exposure to narratives as playing a large role in the education of the desires

and emotions which *phronesis* (practical wisdom or good sense) is particularly concerned to order and regulate.

Alasdair MacIntyre (1981) has argued for the role of imaginative stories in moral learning. He argues that it is not possible to understand or explain human identity, purpose and action in the causal or statistical terms of natural or social science. For him, human behaviour is characteristically rational, intentional and purposive, and human moral and other conduct cannot be understood as other than involving the adoption of reasonable means to desired goals or ends. Thus, MacIntyre goes so far as to say that it is only possible for us to see ourselves as human persons or agents – as creatures operating in a space of moral or other goals, purposes and choices – in terms of something akin to characters in a story. In short, narratives provide the logical form or contours of human self-understanding.

Much imaginative literature – from the great cultural narratives of religion, myth and legend to the poetry, drama and fiction of past and present day writers – has been precisely concerned with exploring the lighter and darker, heroic and demonic, aspects of human character in all its diversity. Other writers in the field of education have recently recognised the potential and power of literature for understanding human moral life and character (Bennett, 1993, Nussbaum, 2001, O'Sullivan, 2004). In particular the work of Karen Bohlin (2005) has done much to show how teachers may use literature to help pupils better appreciate the ethical themes and issues of the stories they encounter in their studies of English literature (see also Carr and Harrison, 2015).

***Links between Virtue Literacy and Faith schools***

Several writers have recently linked the development and practice of virtue in society to religion (Maddox, 2009; Putnam and Campbell, 2010; Annette, 2013). From a secularist position, Alan de Botton (2012) has highlighted the role religion plays in the promotion of virtue in society more generally. In a study of several faith schools Pike (2010, 2011) found that they tend to put a stronger focus on the virtues. Grace (2006: 225) found that Catholic head teachers saw it as part of their role 'to promote the moral formation of their students as good people'. There is also research evidence which indicates that religious practice and education have an explanatory value when discussing virtue (see Burford, 2014). Grace used OFSTED reports to show that the promotion of moral values had a positive effect in Catholic

schools on overall standards. Arthur (2010: 85-86) found that in student responses to questions on virtuous behaviour; doing good acts or desiring to do good acts, were positively affected by alignment with a particular faith. Harrison (2014) in a study of internet usage found that Christian children are more likely to report themselves as being more honest and compassionate than students who say they have no religion. However, to date, there has been little attempt to actually measure the extent to which religion and education has on the levels of virtue literacy among students.

## Method

Conscious that much of the research into school effect in faith schools is not always based on methodologically rigorous research the programme was subjected, from the outset, to an experimental trial alongside other evaluative methods such as interviews. It was hoped that rigorous analysis and interpretation of the data would support the case for the programme's inclusion into the primary curriculum in England and elsewhere. A key issue for research design was how much one might expect to measure through the experimental trial. It is reasonable to suppose that there could be no genuine development of key virtues such as honesty, self-discipline and courage without some significant grasp of the meaning of such terms. However, it is unrealistic to hope that a project of this scope could measure accurately the impact of such understanding on the wider everyday conduct of pupils. So while the interviews sought evidence from teachers, parents and pupils of the possible wider impact of the programme on actual behaviour, the trial focused on the extent to which pupils' knowledge, understanding and meaningful use of virtue language has been enhanced by participation in the programme. In this regard, the programme sought to ask; i) does the programme enhance the knowledge and understanding of the language and concepts of moral virtues of 9 to 11 year olds?; ii) to what extent does it assist the enhancement of the application and practice of moral virtue in 9 to 11 year olds?; and, iii) what is the difference in virtue literacy between pupils in Catholic and other schools?

A quasi-experimental trial was used as the primary method for the evaluation of the impact of the programme. The primary outcome of the trial was to assess the effectiveness of the Knightly Virtues Programme at developing the virtue literacy in 9-11 year olds. In particular the Programme was intended to enhance the knowledge, understanding and application of

virtue language and concepts. Trials are regarded as the gold standard of evidence about 'what works' in practice. Experimental trial in this research is understood as a before and after controlled trial. Pupils who participated in the programme before the post-test were in the 'experimental' group (n = 622) and pupils who did not were in the 'control' group (n = 467). Both experimental and control groups were from the same school for two reasons: i) it is difficult to recruit schools to provide purely control groups, as there is no immediate benefit for them; and, ii) within-school matching means that the control group will be very similar to the experimental group and so minimises 'imbalance across treatment groups' (Campbell *et al.*, 2004: 705). With very similar pupils we assigned one group to undertake the programme and one other group to be a control thereby improving the precision of our estimate of the programme's effect. In order to illuminate and help explain the findings from the trial, two further methods were employed to gather evidence: group interviews with teachers, pupils and parents, and thematic analysis of the pupil journals. It has been shown (Arthur *et al*, 2014) that mixed method approaches to research into character education can help to deliver robust data and therefore any conclusions drawn can be said to have a greater degree of validity. It was therefore important to conduct qualitative research into what, if any, impact the programme had.

**Experimental Trial**

The first stage of the experimental trial was a large pilot study with twenty-six schools and 1329 pupils. Seven schools and 303 pupils were from urban locations (primarily London), and nineteen schools and 1026 participants were from rural locations (Derbyshire, Cheshire and Greater Manchester). During the pilot the questions and choice of stories in the tests were evaluated and revised to ensure they would provide robust outcome measures. The experimental trial took place between September 2013 and January 2014. Twenty-nine schools started the trial as they sent back the pre-test data, all of which were included on an intention to treat basis.

Ten schools did not complete the programme in time, or did not return the post-tests for both the experimental and control groups. In all, there were 47 classes in the trial, with an average class size of 23 pupils. There were a total of 1089 pupils in the experimental trial. 49% per cent of the participants were boys and 51% girls, and most reported being aged 9

(48%) or 10 (45%) at pre-test. 302 pupils attended Catholic schools, 151 attended C of E schools, and 636 attended non-faith schools (see Table 2).

**Table 2: Breakdown of Pupils Attending Faith and Non-faith Schools in the Trial**

| | Participants | | | Male Age Breakdown | | | Female Age Breakdown | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | Male | Female | 9 | 10 | 11 | 9 | 10 | 11 |
| **Catholic** | 302 | 166 | 136 | 88 | 72 | 6 | 53 | 70 | 13 |
| **C of E** | 151 | 77 | 74 | 35 | 37 | 5 | 27 | 43 | 4 |
| **Non-Faith** | 636 | 311 | 325 | 167 | 122 | 22 | 155 | 149 | 21 |

To permit realistic pre- and post- testing, two versions of the test of equal style, length and difficulty were designed to assess; i) reading and writing comprehension (control variable); ii) pupils' knowledge and understanding of virtue language (variable 1); iii) pupils' application of virtue concepts in modern day stories (variable 2); iv) pupils' application of virtue concepts in historical stories (variable 3); and, pupils' application of virtue concepts in personal, social and cultural contexts (variable 4). To reduce the possibility of 'contamination' between classes, each trial school had one or more experimental classes in one year group and one or more control classes in the other year group. Attention was given to achieve a balance of faith and non-faith schools. Beyond this, no attempt was made to equalise the number of pupils in each group. None of the classes were organised by ability so were deemed to be reasonably representative of the school as a whole. The person who performed the allocation to test A or B as the pre-test, had had no contact with the schools or classes before allocating them, so this process was quasi-random. However, the decision to have Year 5 or 6 as the experimental group was undertaken by negotiation with individual schools, so this process was not random. The Trial was balanced insofar as the participants all participated in the same programme. However, it is not possible to guarantee the extent to which this treatment was delivered by the teachers in each of the schools.

There are several limitations to the trial. The experimental and control groups were not randomly assigned, so there is a possibility of systematic bias with schools possibly selecting 'better' classes for the experimental group. Also, for practical reasons, both groups were in the same schools at the same time. Therefore, contamination of the control group is

possible, either by being taught in some way or by resentful demoralisation (being unhappy to be excluded), although the pupils were not aware they were being excluded from the trial. Finally, the schools were in control of many important features of the trial, especially the number and length of sessions devoted to the programme, the timing, duration, setting and conduct of the tests, and inclusion of assemblies and wall displays relating to the programme. For inter-rater reliability (IRR), we used 2 way mixed average measures with absolute agreement. Mixed as teachers considered a fixed effect, but papers/ children are a random sample. For the initial exercise, IRR varied between 0.65 for section C and 0.86 for Reading Level. In the second pre- and post-test exercises, this dropped to between 0.48 for Section C post-test and 0.76 for Reading Level post-test. Explanations for higher initial IRRs could include taking more care initially and some conferring between assessors. However, these differences are non-significant. As an example, the 95% confidence interval for the post-test Reading Level IRR is between 0.55 and 0.87.

**Interviews and journal analysis**

Six schools, all of which were also in the trial, were involved in the interviews. In each school, there were two group interviews with pupils (78 in total) and between one and three individual interviews with teachers (10 in total). Interview schedules were piloted in advance and contained questions about the participants' understanding of the impact of the programme. The interview schedules were semi-structured, allowing a flexible approach to questioning and enabling the interviewer to investigate avenues of interest that may emerge during the interview. The pupil journals contained sections designed to gather parents' impressions of the project. These were situated at the mid and end points of the programme of study. Teachers were asked to encourage parental involvement by allowing the books to be taken home by participants. A sample of 124 programme pupil journals were collected from participating schools of which 30% contained parents' feedback.

The interviews were conducted over a period of 3 months. Each school was visited and the interviews conducted by members of the research team. The interviews resulted in over 6 hours of recorded data; the average duration of the group interviews was 30 minutes (range 20m - 50m). The recordings were then transcribed and checked for accuracy. A thematic analysis of the transcripts was then conducted; Krueger (1994) suggests the notion of

'theoretical saturation', by which the author refers to a tipping point at which patterns and repetitions become pervasive through familiarisation with the available data. This approach was adopted and the transcriptions studied carefully and then coded using NVivo. A similar approach was adopted to analyse sections of the pupil journals.

There are three principal limitations regarding the interviews. First, there is the potential for selection bias as the schools were selected based on established relationships with the research team or independently expressed interest in the programme. Therefore, it is possible that these teachers had pre-existing favourable attitudes towards the programme and character education, particularly in Catholic schools. Secondly, while representative samples of pupils were requested from the participant classes, schools may have offered the more articulate or enthusiastic pupils to reflect better on themselves as institutions. The third limitation is that evidence is self-reported; so interviewees may have exaggerated or otherwise misrepresented certain aspects of the Knightly Virtues' programme.

## Findings from the Experimental Trial

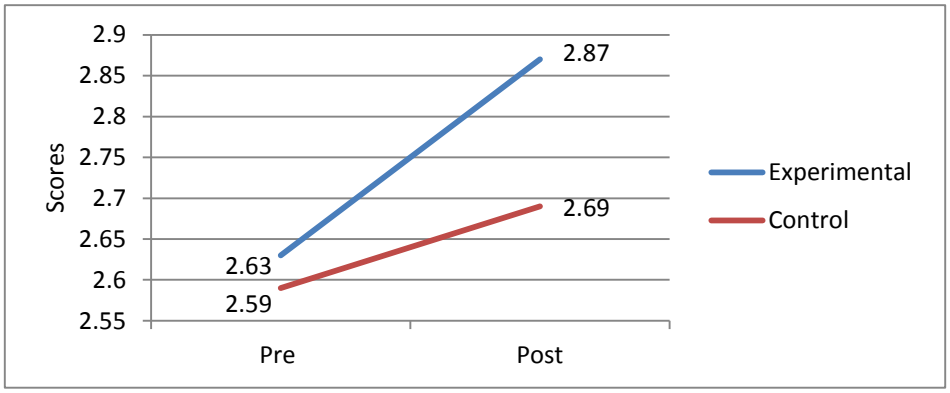
The trial was designed to investigate whether the scores given on the tests for the experimental group were significantly different from those of the control group. As the trial featured more than two groups and numerous variables the primary method of statistical testing employed was Analysis of Variance (ANOVA). The basic ANOVA for the initial tests on each variable was Knightly Virtues (experimental versus control) by time (pre- and post-test) by paper version (A versus B) by Year (Year 5 versus Year 6). In addition the pupils' assessed pre-test reading and writing comprehension level was included as a covariate, as prior analysis showed that this is likely to have an impact on the results. Each of the four variables was marked on a seven point scale from: 0 = no evidence to 6 = very strong evidence. In all four tests the mean mark for the experimental group increased from pre- to post- test. Potential reasons for these increases include simple maturation, i.e. pupils are a few months older and so likely to perform better. This is why the reading and writing comprehension level is used as a covariate and a control group is required to account for maturational effects.

The results from the trial are reported below. For each of the four variables initially the results for all schools in the trial are reported. Significant results from the analysis of faith / non-faith and Catholic / C of E school differences are then reported.

**Variable 1: Knowledge and Understanding of Virtue Language.**

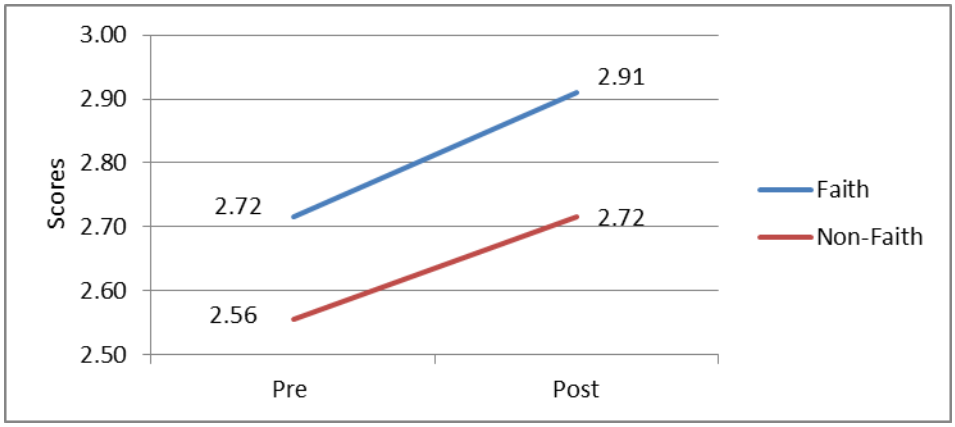
The pre- and post- test was designed to assess what impact the programme had on the knowledge and understanding of virtue language. The evidence for this variable was collected from all the questions in the test and the assessors were looking for knowledge and understanding of virtue language beyond the vocabulary used in the reading booklet. Chart 1 shows the non-significant trend for the experimental group to improve at a greater rate than the control group ($p = 0.1$).

Chart 1 Impact of the Programme on the Knowledge and Understanding of Virtue Language



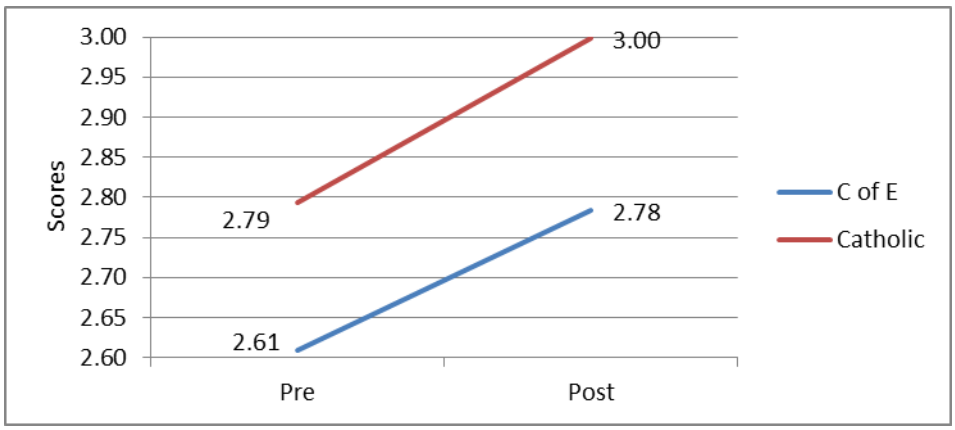

Analysis of the differences between faith and non-faith schools were also undertaken for this variable (Chart 2). Pupils (in both the control and experimental groups) from faith schools started with significantly higher test scores for this variable compared to the pupils attending non-faith schools ($p<0.001$) with pupils attending faith schools scoring 6% higher (95% confidence interval 0.3% to 13%) at pre-test and 7% higher (95% confidence interval -0.3 to 15%) at post-test.

Chart 2: Difference between Faith and Non-Faith schools for Knowledge and Understanding of Virtue Language.




Comparing pupils attending Catholic and C of E schools, the denominational difference was significant (p= 0.014) with Catholic pupils scoring 7% higher (95% confidence interval -2% to 17%) at both pre-test and 8% higher (95% confidence interval -4% to 22%) at post-test– see Chart 3.

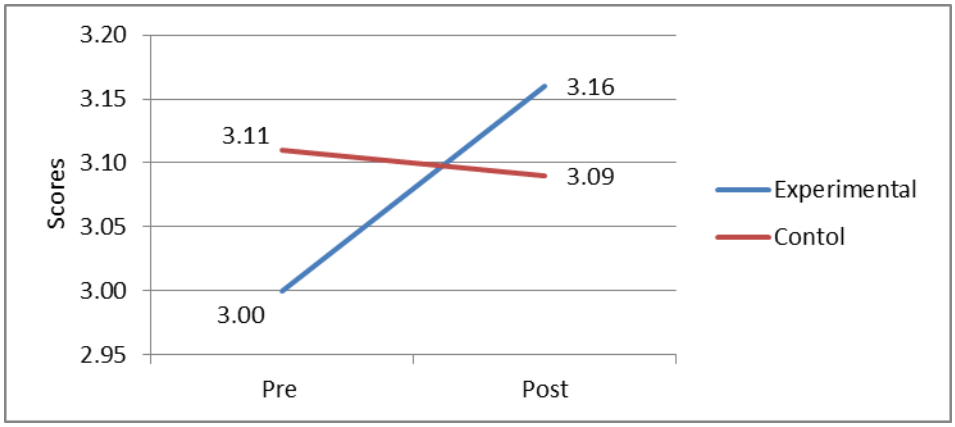
Chart 3: Difference between Catholic and C of E Schools for Knowledge and Understanding of Virtue Language




**Variable 2: Application of Virtue Concepts in Modern Day Stories**

The evidence for variable 2, the application of virtue concepts in modern day stories, was collected from the section where participants were asked to answer questions about situations relating to modern day stories presented in the reading booklets. Chart 4 shows the trend for the experimental group to improve at a greater rate than the control group. (p=0.09). The faith by non-faith interaction was not significant for this variable and therefore any potential differences between Catholic and C of E schools were also not investigated.

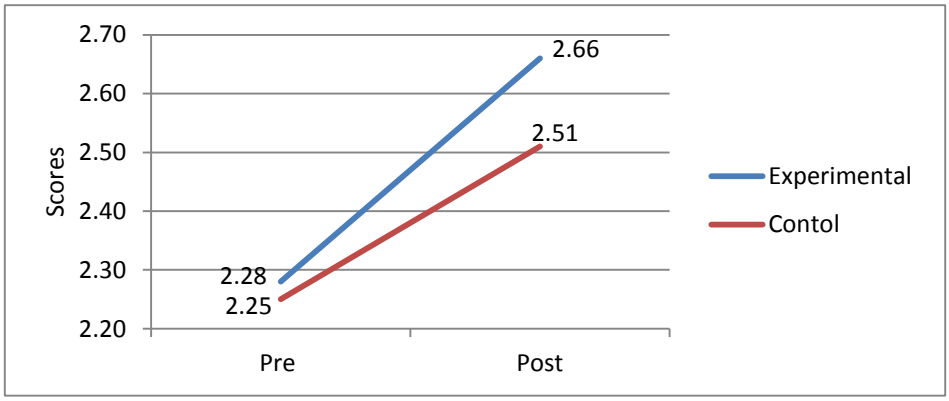
Chart 4: Impact of the Programme on the Application of Virtue Concepts in Modern Day Stories.




**Variable 3: Application of Virtue Concepts in Historical Stories**

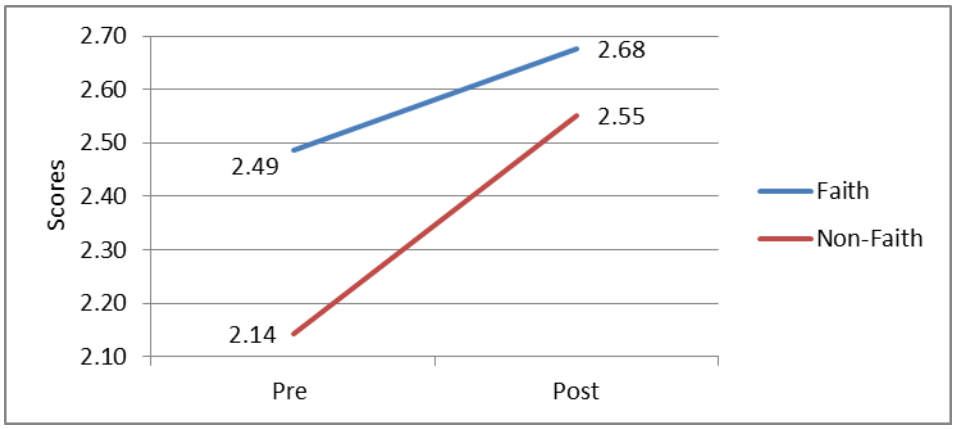
The evidence for variable 3, the application of virtue concepts in historical stories, was collected from the section where participants were asked to answer questions about situations relating to the historical stories presented in the reading booklets. Chart 5 shows the trend for the experimental group to improve at a greater rate than the control group. (p=0.3).

Chart 5: Impact of the Programme on the Application of Virtue Concepts in Historical Stories




The faith / non-faith difference (experimental and control scores combined) was highly significant for this variable ($p<0.001$) with faith students scoring 16 % higher (95% confidence interval 6% to 27%) at pre-test and 15% higher (95% confidence interval -5% to 15%) at post-test - see Chart 6.

Chart 6: Difference between Faith and Non Faith Schools for the Application of Virtue Concepts in Historical Stories.

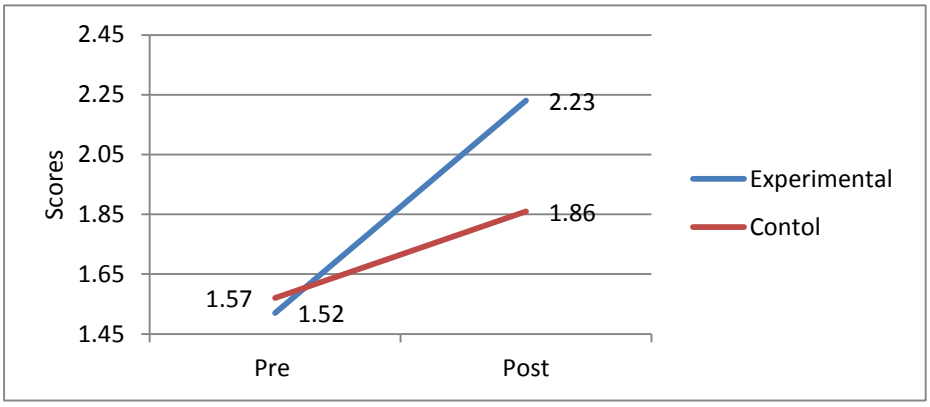



The difference between Catholic and C of E pupils was not significant (p=0.063) for this variable.

**Variable 4: Application of Virtue Concepts in Personal, Social and Cultural contexts.**

The evidence for testing variable 4, the application of virtue concepts in personal, social and cultural contexts, was taken from the final section of the pre- and post-test where the participants were asked to answer questions about their own personal contexts, unrelated to anything presented in the reading booklets. Chart 7 shows the trend, which is highly significant, for the experimental group to improve at a greater rate than the control group ($p < 0.001$).

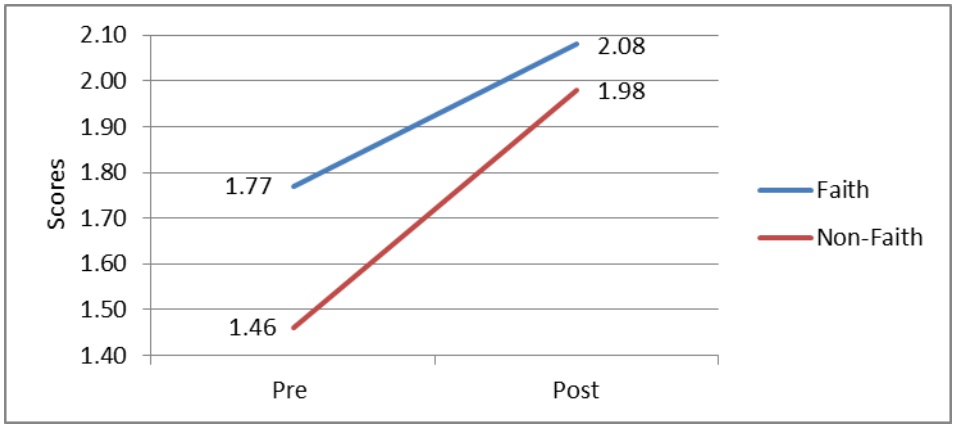
Chart 7: Impact of the Programme on the Application of Virtue Concepts in Personal, Social and Cultural Contexts.



Taking the control group as the baseline, the experimental groups' pre-test scores were 3% lower (95% confidence interval 17% lower to 12% higher) whereas their post-test scores were 21% higher than the control group (95% confidence interval 6% to 38% higher). The programme significantly improved ($p = <0.001$) the experimental pupils in the faith schools application of virtue concepts in social, cultural and personal contexts, compared to pupils in the control groups.

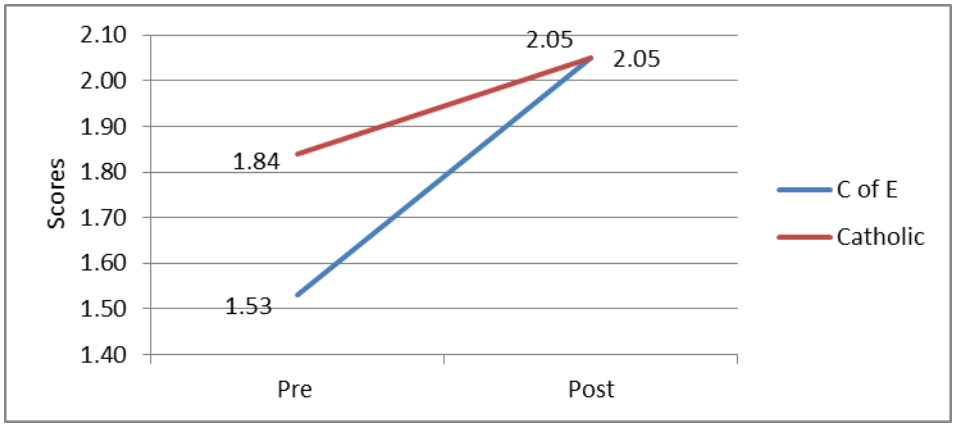
Pupils, in both the control and experimental groups, from faith schools started with significantly higher test scores for this variable compared to the pupils attending non-faith schools ($p <0.05$) – see Chart 8. Taking non-faith as the baseline, students from faith schools pre-test scores were 21% higher (95% confidence interval 6% to 39%) whereas their post-test scores were only 5% higher than those from non-faith schools (95% confidence interval -8% to 19%).

Chart 8: Difference between Faith and Non-Faith Schools for Application of Virtue Concepts in Personal, Social and Cultural Contexts.




There was also a non-significant trend ($p=0.063$) that pupils (experimental and control combined) from the Catholic schools had higher pre-test scores than pupils from the C of E schools (Chart 9) but this reduced during the trial.

Chart 9: Difference between Catholic and Church of England school scores for application of virtue concepts in personal, social contexts




**Findings from the Interviews**

Parents, teachers and the pupils from all schools reported that participants' knowledge and understanding of virtue language had increased as a result of taking part in the programme. All participating pupils were asked at the start of the interviews to complete an exercise naming and defining the virtues taught in the programme. Most of these pupils recalled the virtues, were able to define them as well as relate them to both stories in the programme and stories about their own lives. The role of the virtues in narrative context seemed to help participants to form cognitive links separate to the stories themselves, with one teacher reporting *'...they actually found there was a link between the virtues and the stories and that it related to their own lives.'* (Yr 6 Teacher, Non-faith school in London).

It was evident that the teachers appreciated the introduction of virtue language into the classroom and also that it was used beyond the programme lessons. A recurrent theme of these interviews was that pupils would regularly use virtue terms in their conversations, as well as point out when they had demonstrated a particular virtue. Some teachers reported that the impact of the new virtue language was particularly beneficial for the male pupils. Parents explained that whilst the concepts of 'the good' and 'the bad' were often 'covered' or 'done' at home, the introduction of more complex vocabulary helped their children verbalise their ideas in more precise terms: '*We have strived to give [child's name] a good understanding of right and wrong but this project has perhaps helped her pin-point things better.*'(Parent in London). Many of the comments from parents reported that the programme had helped their child to better understand their relationships with other people and indeed themselves; '*It has helped [child's name] to define the virtues and has*

*helped her put names to the feelings and qualities she already sees in herself and others'*. (Parent in Derbyshire)

Although the primary intention of the programme was to improve participants' knowledge and understanding of virtue language and concepts, it also sought to have an impact on the actual behaviour of those who participated. There is credible evidence in the interviews with teachers, parents and pupils that the programme *did* have a positive effect on the practice of virtues, although this is hard to assess. Numerous examples where pupils had enacted the *virtues* taught in the programme in their lives were reported in the interviews and pupil journals. It was commonplace during interviews for participants to use themselves as examples when explaining a character's actions. For example phrases such as 'like when I….' or 'like when you…' were common.

Furthermore pupils also talked about how their behaviour had changed as a direct result of experiencing the programme. These included pupils reporting that since the programme they had become more self-disciplined with their homework, shown courage to stand up to bullies, were more grateful to their teachers and were providing service to others. Pupils felt the virtues would help them understand their relationships with others, but furthermore, they wished to use the virtues in their daily lives, finding them inspirational. Parents also reported a difference in the behaviour of their children after the programme, for example one said '[child's name]*has learnt a lot about character and different virtues and she is displaying the virtues more*'. (Parent in London)

Several of the teachers from faith schools talked about how the programme and its focus on virtues fitted in with the religious ethos of the school, which was why they were initially motivated to get involved. Some commented on how they already teach many of the virtues in the programme both in assemblies and classroom lessons. For example one teacher stated

> *I think in church schools we talk quite a lot about qualities that make you a good person and how you should treat other people and how you should behave. So we use a lot of that language. (Yr 6 Teacher, Catholic school in London)*

A head-teacher of a Catholic school liked the fact the programme was teaching about the virtues from a different perspective than they normally employed. They stated '*It is interesting for our children that for the project it wasn't coming from a religious angle, that still the human qualities were being discussed from a different angle and the children got that it enhanced their abilities to be able to express themselves.' (Head-Teacher, Catholic school in Derbyshire).*

Participants from faith schools generally showed better understanding and application of the virtues in early pupil journal extracts than those from non-faith schools. This closing of the gap is evident in the group interview data with little discernible difference in the use of language by faith and non-faith school pupils, suggesting perhaps that the programme has a greater impact on those pupils for whom virtue language and concepts may be less familiar.

## Interpretation and Discussion

### *Development of Virtue Literacy*

The experimental trial shows a non-statistically significant trend for all the schools involved that the programme improved the participants' knowledge and understanding of virtue language. Support for this trend comes from the interviews and analysis of the pupil journals, which indicated that participation in the programme appeared to provide the pupils with a better understanding of virtue terms such as courage, gratitude, service, self-discipline and love. Although the experimental group in the trial performed better than the control group, the result was not significant, and this might be explained by 'contamination'. Interviews with teachers as well as visits by the research team to the schools showed that some schools displayed posters of the virtues in the programme around the school, including in some cases in the classes of the control group. Other examples of possible contamination include the experimental group leading assemblies on the programme to other pupils and some schools adopting the programme as their 'whole school' virtues. As such, the control groups in many schools were exposed to the virtue language. This is likely to have influenced the trial results and may possibly explain why the knowledge and understanding of virtue language also improved over the duration of the trial in the control group. As such, it could be argued that the whole ethos of the school, in relation to the

development of virtue language, has been raised by the school's participation in the programme.

The teachers, parents and pupils in the interviews viewed virtue language as an essential building block of character as it provides young people with the tools to articulate their own assessments on their virtue strengths and weaknesses. As Vassalou (2012: 86) argues 'the task of learning, or recovering, the language of the virtues is one that each individual may need to undertake in their efforts of moral self-education'. It is this language that enables young people to have a vocabulary to reflect critically on their own character virtues, to judge other people's actions and behaviour, and to express either concern or delight when they witness the good or bad actions of others. An interesting finding from the interviews was that the pupils in one school retained the knowledge and understanding of the virtue language over six months after experiencing the programme, which provides hope that the learning from the programme is implanted in the participants.

The trial demonstrated, significantly, that the 9 to 11 year olds who participated in the programme were able to apply through writing virtue concepts such as gratitude and service in their own contexts, and make judgements about how others should act in any given situation to a more meaningful extent than those who did not participate in the programme. Participants were encouraged to use the stories as vehicles for reflection on their own moral character strengths, weaknesses and aspirations, although it is difficult within the scope of the trial to determine whether the participants' practice had actually improved over the course of the programme. For example, many of the activities the pupils completed in their journals encouraged them to apply the virtuous actions they had read about in the stories to real life examples in their own social and cultural contexts. So it might be expected that those who took part in the programme would have enhanced their ability to apply learning about virtue from one context into their own. This distinction is significant and echoes earlier work (Arthur *et al,* 2014) pointing to guided self-reflection as an important tool in the development of character in young people. This finding is also important in responding to a common misgiving about character education, namely that the virtues learnt are inherently context-dependent and situation-specific. Judging from this finding, it is arguably safe to assume that the activities within the pupil journals have created the cognitive connections required for participants to 'think' in terms of virtue

concepts when required along a wide spectrum of circumstances. Asking participants to focus on the virtues displayed in the stories and to then apply these virtues to their own life seems to have allowed a personal understanding to be formed by which the virtue knowledge is integrated within the self.

***Virtue Literacy and faith / non-faith schools***

One of the most striking features of the results was the difference between different types of schools. There was a marked difference between the scores of the pupils from the faith and non-faith schools, as well as a difference between the scores of the pupils attending Catholic and C of E schools. A prominent research finding was that the pre-test results of pupils attending Catholic schools were significantly higher than those of the non-faith[3] schools and Church of England schools. In addition, in all of the variables the pupils from faith schools had higher pre- and post- scores than those attending the non-faith schools. Those from Catholic schools had better pre- and post-test results than those from C of E schools. For two of the variables; knowledge and understanding of virtue language and application of virtue concepts in personal social and cultural contexts - these results were particularly significant. Evidence for why this might be the case can be found in the interviews. Many of the teachers who worked at faith schools spoke about the programme fitting in with the ethos and culture of their school in the fact that they already 'teach the virtues'. Several felt that the programme was a natural fit with the vision and aims of their school as well as reinforcing other areas of the curriculum, as well as whole school activities such as assemblies, where they taught about virtues. It is also interesting that for some of the variables the gap between pre- and post- test results narrowed which suggests the programme might have had a greater impact on non-faith schools and those who were perhaps less familiar with virtue language and concepts.

A positive Catholic school effect is standard in the research literature, particularly in relation to academic achievement and there is wide reporting of a faith school 'value-added premium' (Pugh, Davies and Adnett, 2006: 23). The result reported in this research may perhaps be explained by the fact that Catholic schools are expected by the Church to explicitly teach the virtues, including Christian virtues. For example, both the Catechism of the Catholic Church (2012) and the National Directory for Religious Education in England

and Wales (2012) give official guidance on teaching virtues in Catholic schools. Evidence drawn from the interviews with teachers in Catholic schools also showed that teachers believed that the programme fitted with their school ethos and practice as well as their schools' emphasis on cultivating virtues. Nevertheless it is important to be conscious that higher scores among pupils in Catholic schools may not necessarily be the result of the so called 'school effect' (factors that are intrinsic to the school itself). Other factors such as parental education and beliefs, home ethos and the many variables that led to a child being in a Catholic school in the first place certainly play a part. Catholic schools draw upon existing social and religious capital of Catholic families and this capital provides the schools with a pre-existing source of norms and values. It therefore cannot be ruled out the possibility of non-school factors for pupils in Catholic schools scoring significantly higher scores in pre-test results.

**Conclusion**

The research summarised in this article demonstrates the significant impact of the *Knightly Virtues Programme* on the 9 to 11 year old pupils who participated. Pupils attending Catholic schools possess, on average, higher ability to identify moral distinctions, understand them and be able to interpret and communicate them within a virtue language frame. The extent of their application of virtue principles and practices requires further research as the gap between recognition of a virtue and the performance of that virtue remains to be investigated. The research evidence shows that the programme has re-introduced, using contemporary language and modern teaching methods, classical and time-honoured understandings of the virtues. This has helped pupils unfamiliar with this language to nurture and apply them. Ultimately, it has made them more virtue literate.

The research showed a marked difference in the virtue literacy levels of those from different types of faith schools and also those from non-faith schools. The main finding is that there is an explicit connection between morality and religion in Catholic schools. Pupils attending Catholic schools had higher pre- and post- test scores that those attending C of E schools and non-faith schools. Although the scores of the pupils in the faith schools improved over

the course of the trial, the improvement rate in pupils attending non-faith schools was even greater for some variables. It might therefore be said that the programme has helped schools where young people perhaps had less knowledge and understanding of virtue language and concepts to 'catch up' with those schools that had taught about the virtues before the programme. As such, the programme has contributed to the knowledge and understanding of virtue language and concepts in some non-faith schools, and by doing so might be said to have enhanced the teaching of character education.

[1] The research reported on in this article explored what impact the programme had on different types of schools – including those that were faith and non-faith based. All State schools in England are required by legislation to have a daily act of worship and teach Religious Education which should normally be of a Christian character. In addition, a third of schools in England are run by religious bodies and these are predominantly Church of England (C of E) or Catholic. When this article refers to *faith* schools it means C of E or Catholic (no schools of other denomination were involved in the research) whilst *non-faith* schools refers to all other schools not attached to or run by a specific religious body.

[2] For a full list of all the stories in the programme and to view the teaching materials visit http://www.jubileecentre.ac.uk/417/projects/development-projects/knightly-virtues

**APPENDIX**

The ANOVA results presented below relate to the 9 charts in the paper '*Levels of Virtue Literacy in Catholic, Church of England and Non-Faith Schools'* and published in the International Studies in Catholic Education journal in 2015. The paper was authored by by James Arthur, Tom Harrison and Ian Davison.

*For more information about the Journal see:*

*http://www.tandfonline.com/toc/rice20/current#.VP15C3ysV8E*

*For more information about the Knightly Virtue programme that the paper relates to see:*

*http://www.jubileecentre.ac.uk/417/projects/development-projects/knightly-virtues*

## ANOVA results associated with Chart 1

| Tests of Within-Subjects Effects | | | | | |
|---|---|---|---|---|---|
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Time | 78.792 | 1.000 | 78.792 | 87.283 | .000 |
| Time * SRL.1 | 66.641 | 1.000 | 66.641 | 73.824 | .000 |
| Time * CTRL_EXP | 2.457 | 1.000 | 2.457 | 2.722 | .099 |
| Time * SCHOOL_YEAR | .226 | 1.000 | .226 | .250 | .617 |
| Time * preVersion | .361 | 1.000 | .361 | .400 | .527 |
| Time * CTRL_EXP * SCHOOL_YEAR | 10.146 | 1.000 | 10.146 | 11.239 | .001 |
| Time * CTRL_EXP * preVersion | 3.281 | 1.000 | 3.281 | 3.635 | .057 |
| Time * SCHOOL_YEAR * preVersion | .254 | 1.000 | .254 | .282 | .596 |
| Time * CTRL_EXP * SCHOOL_YEAR * preVersion | 3.290 | 1.000 | 3.290 | 3.644 | .057 |
| Error(Time) | 931.597 | 1032.000 | .903 | | |

Greenhouse-Geisser correction used throughout

| Tests of Between-Subjects Effects | | | | | |
|---|---|---|---|---|---|
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Intercept | 78.198 | 1 | 78.198 | 68.557 | .000 |
| SRL.1 | 702.257 | 1 | 702.257 | 615.677 | .000 |
| CTRL_EXP | 5.299 | 1 | 5.299 | 4.646 | .031 |
| SCHOOL_YEAR | 22.748 | 1 | 22.748 | 19.943 | .000 |
| preVersion | .856 | 1 | .856 | .751 | .386 |
| CTRL_EXP * SCHOOL_YEAR | 15.857 | 1 | 15.857 | 13.902 | .000 |
| CTRL_EXP * preVersion | 1.761 | 1 | 1.761 | 1.544 | .214 |
| SCHOOL_YEAR * preVersion | 2.171 | 1 | 2.171 | 1.903 | .168 |
| CTRL_EXP * SCHOOL_YEAR * preVersion | 1.536 | 1 | 1.536 | 1.346 | .246 |
| Error | 1177.125 | 1032 | 1.141 | | |

## ANOVA results associated with Chart 2

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Time | 97.066 | 1 | 97.066 | 109.227 | .000 |
| Time * SRL.1 | 83.107 | 1 | 83.107 | 93.519 | .000 |
| Time * CTRL_EXP | .938 | 1 | .938 | 1.056 | .304 |
| Time * SCHOOL_YEAR | 1.330 | 1 | 1.330 | 1.496 | .222 |
| Time * Faith_NonFaith | .135 | 1 | .135 | .152 | .697 |
| Time * CTRL_EXP * SCHOOL_YEAR | 12.397 | 1 | 12.397 | 13.950 | .000 |
| Time * CTRL_EXP * Faith_NonFaith | 1.867 | 1 | 1.867 | 2.101 | .147 |
| Time * SCHOOL_YEAR * Faith_NonFaith | .690 | 1 | .690 | .776 | .379 |
| Time * CTRL_EXP * SCHOOL_YEAR * Faith_NonFaith | 16.618 | 1 | 16.618 | 18.700 | .000 |
| Error(Time) | 917.101 | 1032 | .889 | | |

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Intercept | 101.753 | 1 | 101.753 | 93.255 | .000 |
| SRL.1 | 656.778 | 1 | 656.778 | 601.926 | .000 |
| CTRL_EXP | 3.930 | 1 | 3.930 | 3.601 | .058 |
| SCHOOL_YEAR | 22.462 | 1 | 22.462 | 20.586 | .000 |
| Faith_NonFaith | 14.922 | 1 | 14.922 | 13.676 | .000 |
| CTRL_EXP * SCHOOL_YEAR | 15.775 | 1 | 15.775 | 14.457 | .000 |
| CTRL_EXP * Faith_NonFaith | 13.477 | 1 | 13.477 | 12.352 | .000 |
| SCHOOL_YEAR * Faith_NonFaith | 7.682 | 1 | 7.682 | 7.040 | .008 |
| CTRL_EXP * SCHOOL_YEAR * Faith_NonFaith | 14.159 | 1 | 14.159 | 12.976 | .000 |
| Error | 1126.044 | 1032 | 1.091 | | |

## ANOVA results associated with Chart 3

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Time | 28.044 | 1 | 28.044 | 31.616 | .000 |
| Time * SRL.1 | 21.740 | 1 | 21.740 | 24.509 | .000 |
| Time * CTRL_EXP | .543 | 1 | .543 | .612 | .434 |
| Time * SCHOOL_YEAR | .632 | 1 | .632 | .712 | .399 |
| Time * Denomination | .043 | 1 | .043 | .049 | .826 |
| Time * CTRL_EXP * SCHOOL_YEAR | 20.169 | 1 | 20.169 | 22.738 | .000 |
| Time * CTRL_EXP * Denomination | 4.246 | 1 | 4.246 | 4.787 | .029 |
| Time * SCHOOL_YEAR * Denomination | .004 | 1 | .004 | .004 | .947 |
| Time * CTRL_EXP * SCHOOL_YEAR * Denomination | .023 | 1 | .023 | .026 | .872 |
| Error(Time) | 377.873 | 426 | .887 | | |

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Intercept | 37.642 | 1 | 37.642 | 32.290 | .000 |
| SRL.1 | 270.586 | 1 | 270.586 | 232.112 | .000 |
| CTRL_EXP | 15.358 | 1 | 15.358 | 13.174 | .000 |
| SCHOOL_YEAR | 4.790 | 1 | 4.790 | 4.109 | .043 |
| Denomination | 7.072 | 1 | 7.072 | 6.067 | .014 |
| CTRL_EXP * SCHOOL_YEAR | 12.468 | 1 | 12.468 | 10.695 | .001 |
| CTRL_EXP * Denomination | .376 | 1 | .376 | .323 | .570 |
| SCHOOL_YEAR * Denomination | 9.274 | 1 | 9.274 | 7.955 | .005 |
| CTRL_EXP * SCHOOL_YEAR * Denomination | 2.993 | 1 | 2.993 | 2.568 | .110 |
| Error | 496.613 | 426 | 1.166 | | |

## ANOVA results associated with Chart 4

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Time | 78.689 | 1 | 78.689 | 66.130 | .000 |
| Time * SRL.1 | 78.207 | 1 | 78.207 | 65.725 | .000 |
| Time * CTRL_EXP | 3.522 | 1 | 3.522 | 2.960 | .086 |
| Time * SCHOOL_YEAR | .243 | 1 | .243 | .204 | .652 |
| Time * preVersion | 9.923 | 1 | 9.923 | 8.339 | .004 |
| Time * CTRL_EXP * SCHOOL_YEAR | 17.584 | 1 | 17.584 | 14.778 | .000 |
| Time * CTRL_EXP * preVersion | 3.128 | 1 | 3.128 | 2.629 | .105 |
| Time * SCHOOL_YEAR * preVersion | 1.038 | 1 | 1.038 | .873 | .350 |
| Time * CTRL_EXP * SCHOOL_YEAR * preVersion | 1.505 | 1 | 1.505 | 1.265 | .261 |
| Error(Time) | 1227.990 | 1032 | 1.190 | | |

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Intercept | 147.961 | 1 | 147.961 | 120.912 | .000 |
| SRL.1 | 797.233 | 1 | 797.233 | 651.487 | .000 |
| CTRL_EXP | .206 | 1 | .206 | .169 | .681 |
| SCHOOL_YEAR | 16.571 | 1 | 16.571 | 13.541 | .000 |
| preVersion | .642 | 1 | .642 | .525 | .469 |
| CTRL_EXP * SCHOOL_YEAR | 6.708 | 1 | 6.708 | 5.482 | .019 |
| CTRL_EXP * preVersion | .526 | 1 | .526 | .429 | .512 |
| SCHOOL_YEAR * preVersion | 1.003 | 1 | 1.003 | .820 | .366 |
| CTRL_EXP * SCHOOL_YEAR * preVersion | .295 | 1 | .295 | .241 | .624 |
| Error | 1262.871 | 1032 | 1.224 | | |

## ANOVA results associated with Chart 5

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Time | 135.599 | 1 | 135.599 | 94.150 | .000 |
| Time * SRL.1 | 102.150 | 1 | 102.150 | 70.926 | .000 |
| Time * CTRL_EXP | 1.890 | 1 | 1.890 | 1.312 | .252 |
| Time * SCHOOL_YEAR | 1.244 | 1 | 1.244 | .864 | .353 |
| Time * preVersion | .752 | 1 | .752 | .522 | .470 |
| Time * CTRL_EXP * SCHOOL_YEAR | 4.313 | 1 | 4.313 | 2.995 | .084 |
| Time * CTRL_EXP * preVersion | 3.813 | 1 | 3.813 | 2.648 | .104 |
| Time * SCHOOL_YEAR * preVersion | .146 | 1 | .146 | .101 | .750 |
| Time * CTRL_EXP * SCHOOL_YEAR * preVersion | 3.522 | 1 | 3.522 | 2.446 | .118 |
| Error(Time) | 1486.329 | 1032 | 1.440 | | |

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Intercept | .037 | 1 | .037 | .021 | .885 |
| SRL.1 | 1022.768 | 1 | 1022.768 | 578.519 | .000 |
| CTRL_EXP | 3.562 | 1 | 3.562 | 2.015 | .156 |
| SCHOOL_YEAR | 59.293 | 1 | 59.293 | 33.538 | .000 |
| preVersion | 7.958 | 1 | 7.958 | 4.501 | .034 |
| CTRL_EXP * SCHOOL_YEAR | 45.043 | 1 | 45.043 | 25.478 | .000 |
| CTRL_EXP * preVersion | .355 | 1 | .355 | .201 | .654 |
| SCHOOL_YEAR * preVersion | 2.083 | 1 | 2.083 | 1.178 | .278 |
| CTRL_EXP * SCHOOL_YEAR * preVersion | .027 | 1 | .027 | .015 | .903 |
| Error | 1824.480 | 1032 | 1.768 | | |

## ANOVA results associated with Chart 6

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Time | 155.653 | 1 | 155.653 | 109.099 | .000 |
| Time * SRL.1 | 122.052 | 1 | 122.052 | 85.548 | .000 |
| Time * CTRL_EXP | .422 | 1 | .422 | .296 | .587 |
| Time * SCHOOL_YEAR | 4.629 | 1 | 4.629 | 3.245 | .072 |
| Time * Faith_NonFaith | 5.616 | 1 | 5.616 | 3.937 | .048 |
| Time * CTRL_EXP * SCHOOL_YEAR | 6.166 | 1 | 6.166 | 4.322 | .038 |
| Time * CTRL_EXP * Faith_NonFaith | .258 | 1 | .258 | .181 | .671 |
| Time * SCHOOL_YEAR * Faith_NonFaith | 1.071 | 1 | 1.071 | .750 | .387 |
| Time * CTRL_EXP * SCHOOL_YEAR * Faith_NonFaith | 16.702 | 1 | 16.702 | 11.707 | .001 |
| Error(Time) | 1472.364 | 1032 | 1.427 | | |

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Intercept | .572 | 1 | .572 | .333 | .564 |
| SRL.1 | 1019.708 | 1 | 1019.708 | 593.563 | .000 |
| CTRL_EXP | 4.753 | 1 | 4.753 | 2.767 | .097 |
| SCHOOL_YEAR | 52.513 | 1 | 52.513 | 30.567 | .000 |
| Faith_NonFaith | 26.005 | 1 | 26.005 | 15.137 | .000 |
| CTRL_EXP * SCHOOL_YEAR | 35.808 | 1 | 35.808 | 20.844 | .000 |
| CTRL_EXP * Faith_NonFaith | 18.148 | 1 | 18.148 | 10.564 | .001 |
| SCHOOL_YEAR * Faith_NonFaith | 10.135 | 1 | 10.135 | 5.899 | .015 |
| CTRL_EXP * SCHOOL_YEAR * Faith_NonFaith | .052 | 1 | .052 | .030 | .862 |
| Error | 1772.918 | 1032 | 1.718 | | |

## ANOVA results associated with Chart 7

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Time | 96.822 | 1 | 96.822 | 69.099 | .000 |
| Time * SRL.1 | 49.792 | 1 | 49.792 | 35.535 | .000 |
| Time * CTRL_EXP | 21.071 | 1 | 21.071 | 15.038 | .000 |
| Time * SCHOOL_YEAR | .272 | 1 | .272 | .194 | .660 |
| Time * preVersion | 19.566 | 1 | 19.566 | 13.964 | .000 |
| Time * CTRL_EXP * SCHOOL_YEAR | 1.179 | 1 | 1.179 | .842 | .359 |
| Time * CTRL_EXP * preVersion | 1.902 | 1 | 1.902 | 1.357 | .244 |
| Time * SCHOOL_YEAR * preVersion | .066 | 1 | .066 | .047 | .828 |
| Time * CTRL_EXP * SCHOOL_YEAR * preVersion | .723 | 1 | .723 | .516 | .473 |
| Error(Time) | 1446.029 | 1032 | 1.401 | | |

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Intercept | 2.509 | 1 | 2.509 | 1.100 | .294 |
| SRL.1 | 648.841 | 1 | 648.841 | 284.547 | .000 |
| CTRL_EXP | 12.331 | 1 | 12.331 | 5.408 | .020 |
| SCHOOL_YEAR | 203.705 | 1 | 203.705 | 89.334 | .000 |
| preVersion | .655 | 1 | .655 | .287 | .592 |
| CTRL_EXP * SCHOOL_YEAR | 74.676 | 1 | 74.676 | 32.749 | .000 |
| CTRL_EXP * preVersion | 4.358 | 1 | 4.358 | 1.911 | .167 |
| SCHOOL_YEAR * preVersion | .404 | 1 | .404 | .177 | .674 |
| CTRL_EXP * SCHOOL_YEAR * preVersion | 11.672 | 1 | 11.672 | 5.119 | .024 |
| Error | 2353.224 | 1032 | 2.280 | | |

## ANOVA results associated with Chart 8

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Time | 100.418 | 1 | 100.418 | 71.710 | .000 |
| Time * SRL.1 | 59.788 | 1 | 59.788 | 42.695 | .000 |
| Time * CTRL_EXP | 21.649 | 1 | 21.649 | 15.460 | .000 |
| Time * SCHOOL_YEAR | 3.271 | 1 | 3.271 | 2.336 | .127 |
| Time * Faith_NonFaith | 5.493 | 1 | 5.493 | 3.922 | .048 |
| Time * CTRL_EXP * SCHOOL_YEAR | 2.682 | 1 | 2.682 | 1.915 | .167 |
| Time * CTRL_EXP * Faith_NonFaith | 2.117 | 1 | 2.117 | 1.511 | .219 |
| Time * SCHOOL_YEAR * Faith_NonFaith | 14.968 | 1 | 14.968 | 10.689 | .001 |
| Time * CTRL_EXP * SCHOOL_YEAR * Faith_NonFaith | 2.192 | 1 | 2.192 | 1.566 | .211 |
| Error(Time) | 1445.158 | 1032 | 1.400 | | |

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Intercept | 1.556 | 1 | 1.556 | .701 | .402 |
| SRL.1 | 648.441 | 1 | 648.441 | 292.271 | .000 |
| CTRL_EXP | 15.992 | 1 | 15.992 | 7.208 | .007 |
| SCHOOL_YEAR | 168.857 | 1 | 168.857 | 76.109 | .000 |
| Faith_NonFaith | 19.772 | 1 | 19.772 | 8.912 | .003 |

| | | | | | |
|---|---|---|---|---|---|
| CTRL_EXP * SCHOOL_YEAR | 91.148 | 1 | 91.148 | 41.083 | .000 |
| CTRL_EXP * Faith_NonFaith | 11.478 | 1 | 11.478 | 5.173 | .023 |
| SCHOOL_YEAR * Faith_NonFaith | 44.364 | 1 | 44.364 | 19.996 | .000 |
| CTRL_EXP * SCHOOL_YEAR * Faith_NonFaith | 6.179 | 1 | 6.179 | 2.785 | .095 |
| Error | 2289.629 | 1032 | 2.219 | | |

## ANOVA results associated with Chart 9

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Time | 48.118 | 1 | 48.118 | 35.333 | .000 |
| Time * SRL.1 | 31.846 | 1 | 31.846 | 23.384 | .000 |
| Time * CTRL_EXP | 8.842 | 1 | 8.842 | 6.492 | .011 |
| Time * SCHOOL_YEAR | 9.873 | 1 | 9.873 | 7.250 | .007 |
| Time * Denomination | 4.176 | 1 | 4.176 | 3.066 | .081 |
| Time * CTRL_EXP * SCHOOL_YEAR | 9.107 | 1 | 9.107 | 6.687 | .010 |
| Time * CTRL_EXP * Denomination | 5.942 | 1 | 5.942 | 4.363 | .037 |
| Time * SCHOOL_YEAR * Denomination | .070 | 1 | .070 | .051 | .821 |
| Time * CTRL_EXP * SCHOOL_YEAR * Denomination | 3.347 | 1 | 3.347 | 2.458 | .118 |
| Error(Time) | 580.156 | 426 | 1.362 | | |

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Intercept | 5.064 | 1 | 5.064 | 2.186 | .140 |
| SRL.1 | 305.564 | 1 | 305.564 | 131.907 | .000 |
| CTRL_EXP | 29.676 | 1 | 29.676 | 12.811 | .000 |
| SCHOOL_YEAR | 32.854 | 1 | 32.854 | 14.183 | .000 |
| Denomination | 4.115 | 1 | 4.115 | 1.776 | .183 |
| CTRL_EXP * SCHOOL_YEAR | 11.225 | 1 | 11.225 | 4.846 | .028 |
| CTRL_EXP * Denomination | .087 | 1 | .087 | .038 | .846 |
| SCHOOL_YEAR * Denomination | 19.104 | 1 | 19.104 | 8.247 | .004 |
| CTRL_EXP * SCHOOL_YEAR * Denomination | 105.727 | 1 | 105.727 | 45.640 | .000 |
| Error | 986.836 | 426 | 2.317 | | |

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